

ENERGY

CONSERVATION

At a Glance

Energy efficiency in Kentucky (Btus used to produce \$1 of state gross product)

1980. 38,334
1990. 21,789
1997. 17,832

Energy lost in the electrical generation and transmission process (trillion Btu)

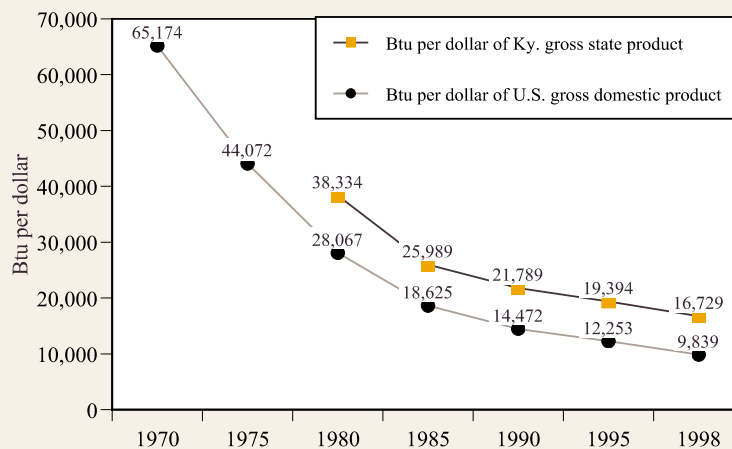
1990. 405.4
1999. 528.8

Indicator 4. Energy Efficiency and Conservation

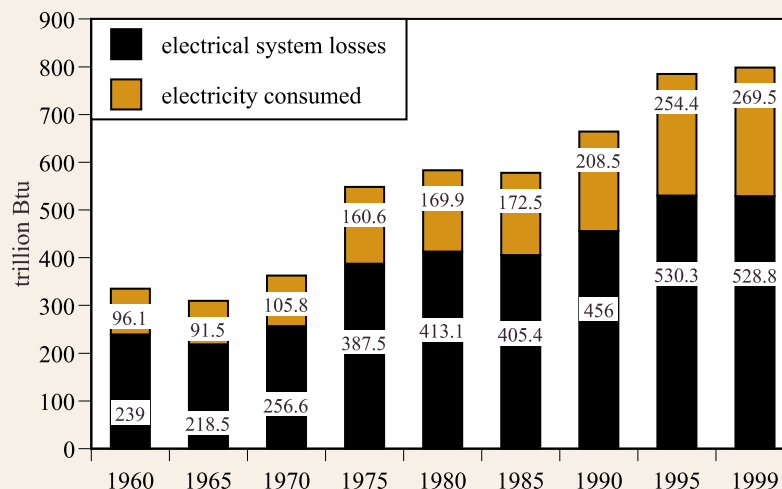
Background For many Kentuckians, the connection between energy, economics and the environment is becoming ever more clear. Volatile natural gas and gasoline prices, combined with environmental concerns such as global warming associated with burning of fossil fuels, has brought the issue of energy back to the national agenda. The Bush administration's national energy policy released in May 2001, emphasizes increased energy production from domestic sources. The policy documents that conservation and energy efficiency are important elements of a sound energy policy. However, the policy offers few incentives to improve energy efficiency, according to a number of critics. This and other energy issues will be subject of congressional debate throughout the year.

Goal Provide for the Commonwealth's energy needs in the most efficient and cost-effective way possible while protecting the environment and conserving our natural resources.

Measure 1. Energy Efficiency - Btus Used to Produce a Dollar of Product



Measure 2. Electrical System Losses in Kentucky



Progress Energy efficiency is the ability to use less energy to produce the same amount of lighting, heating, transportation and other energy services.¹ One measure of energy efficiency is energy intensity—the amount of energy it takes to produce a dollar of gross domestic product.² While Kentucky uses more energy than the national average, it has been following the national trend towards greater energy efficiency. For example, in 1997 Kentucky used 56 percent less energy to produce a dollar of Gross State Product than it did back in the 1980s. Gains in energy efficiency are attributed to technological improvements and better management practices. For example, new home refrigerators use about one third less energy than they used in 1972. The ENERGY STAR program was created by the U.S. EPA in 1992 as a voluntary labeling program designed to promote energy-efficient products in order to reduce carbon dioxide emissions. ENERGY STAR has expanded to cover new homes, most of the building sector, residential heating and cooling equipment, major appliances, office equipment, lighting and consumer electronics. There are 22 Energy Star Partners in Kentucky and one ENERGY STAR building (Aegon Center in Louisville). Aegon Center is a 35-story office building built in 1993 in downtown Louisville. Aegon Center received an Energy Star Label because of the use of highly efficient lighting systems. The building also has advanced climate control systems, which include variable speed drives on all of its air handling units, allowing the energy consumed to vary with demand.

But more can be done to improve energy efficiency and conservation in Kentucky, according to state officials. They indicate that the present rate setting structure provides a powerful incentive for utilities to sell more electricity. Additional measures are needed to encourage utilities to promote consumer efficiency.

State officials also point to the problem of energy loss during the production and transmission of electricity. For example, during 1999 only about 34 percent of the energy generated by large power plants is delivered to the consumer. The remaining 66 percent of the electricity generated was primarily lost due to the inherent inefficiencies in the conversion of fuel to useful energy. Energy is also lost during transmission of energy but accounts for only a small portion, about 5 percent, of the energy lost. Some energy is also used to operate pollution control equipment at power plants. Although 66 percent is a large loss, this is an improvement over previous years. For example, energy losses averaged 71 percent from 1960 through 1990.

Some efforts are underway to assist industries reduce energy waste. A new initiative of the Kentucky Division of Energy, funded by two grants from the U.S. Department of Energy, is the *Kentucky Industries of the Future* Project. Certain energy-intensive industries, including aluminum, steel, mining, chemicals, agriculture, metal casting and forest products, will jointly pursue projects that improve the energy efficiency of their industrial processes and reduce the amount of waste and pollution generated.

Kentucky has also initiated the Energy Efficiency in Government Buildings Program. This program provides technical assistance to help retrofit government buildings to improve energy efficiency and provide help with the operation and maintenance of the systems. The Ky. Division of Energy also administers the Institutional Conservation Program, which helps nonprofit schools and hospitals make improvements in the energy efficiency of their buildings.

Footnotes

1. *National Energy Policy, Chapter 4, Using Energy Wisely*, National Energy Policy Development Group, May 2001.
2. *Ibid.*
3. 1997, Table 119, *Energy Information Administration*.

Measures - notes and sources

Measure 1. Based on Btu's required to produce a dollar of gross state product. Adjusted for inflation using the consumer price index for 2000. 1998 most recent data available. Source: Bureau of Economic Analysis, *National and Regional Income and Product Accounts Data*, Energy Information Administration; U.S. Census Bureau.

Measure 2. Losses incurred in the generation, transmission, and distribution of electricity plus plant use and unaccounted for electrical system energy losses. Source: *State Energy Data Report 1999*, Energy Information Administration.